



Where energy meets innovation.

EQT PRODUCTION

Wetzel County, WV

Big 190

Well #516847 - MRC

Main Wellbore

Design: Surveys Main Wellbore

Standard Survey Report

22 July, 2017

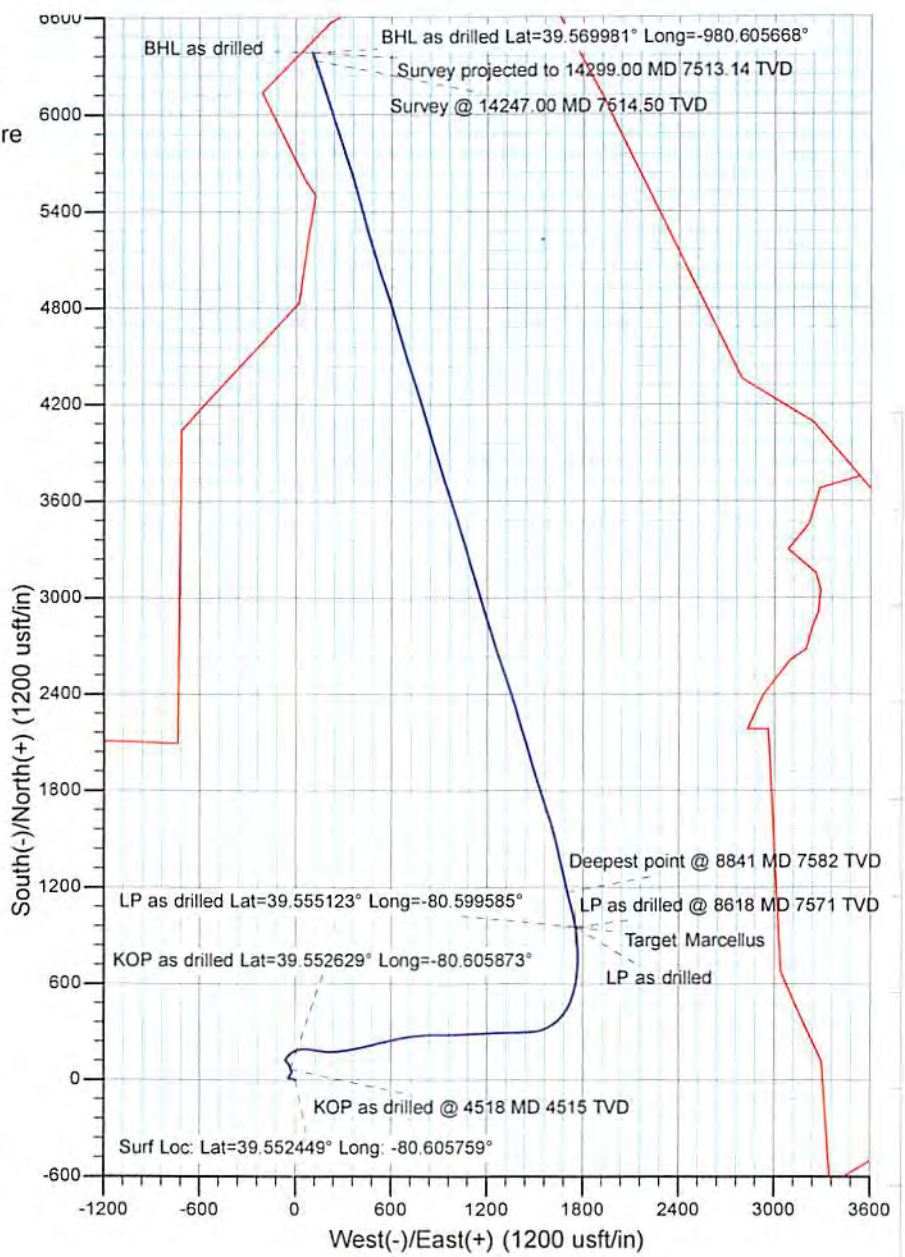
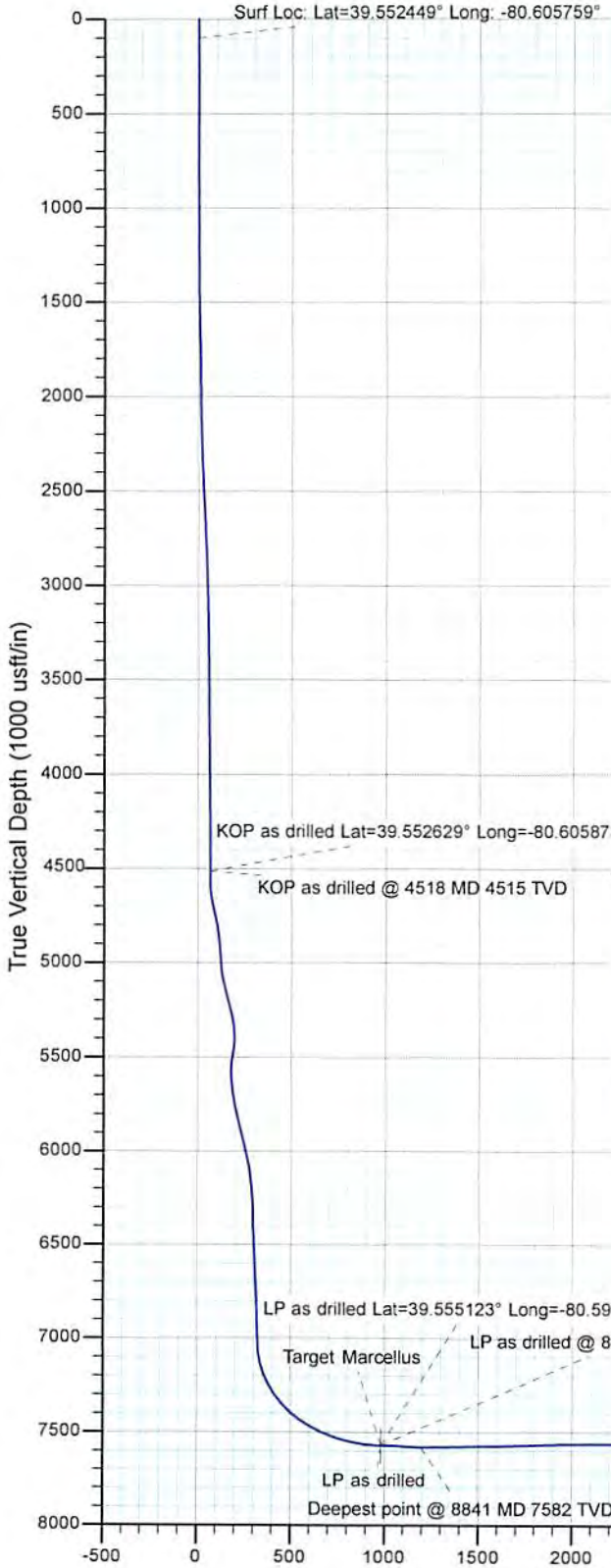
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02/16/2018



Azimuths to Grid North
 True North: 0.70°
 Magnetic North: -7.54°
 Magnetic Field
 Strength: 52333.0snT
 Dip Angle: 66.88°
 Date: 7/13/2017
 Model: HDGM



ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	V/Sect	Annotation
100.00	0.20	291.28	100.00	0.06	-0.16	0.06	Gyro
100.00	0.20	291.28	100.00	0.06	-0.16	0.06	Surf Loc: Lat=39.552449° Long: -80.605759°
4518.00	0.61	328.66	4514.74	66.21	-31.16	65.69	KOP as drilled @ 4518 MD 4515 TVD
4518.00	0.61	328.66	4514.74	66.21	-31.16	65.69	ProD MWD surveys
4518.00	0.61	328.66	4514.74	66.21	-31.16	65.69	KOP as drilled Lat=39.552629° Long=-80.605873°
5527.00	37.60	95.20	5545.30	175.29	176.36	178.16	ProD MWD surveys
8618.00	88.66	350.59	7571.30	952.60	1752.77	981.23	LP as drilled @ 8618 MD 7571 TVD
8618.00	88.66	350.59	7571.30	952.60	1752.77	981.23	Target Marcellus
8618.00	88.66	350.59	7571.30	952.60	1752.77	981.23	LP as drilled Lat=39.555123° Long=-80.599585°
8841.00	88.00	345.90	7581.66	1169.47	1702.61	1197.25	Deepest point @ 8841 MD 7582 TVD
14247.00	91.50	341.40	7514.50	6335.85	120.82	6336.98	Survey @ 14247.00 MD 7514.50 TVD
14299.00	91.50	341.40	7513.14	6385.11	104.24	6385.96	Survey projected to 14299.00 MD 7513.14 TVD
14299.00	91.50	341.40	7513.14	6385.11	104.24	6385.96	BHL as drilled Lat=39.569981° Long=-980.605668°

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Survey projected to 14299.00 MD 7513.14 TVD
 Survey @ 14247.00 MD 7514.50 TVD

02/16/2018

Company:	EQT PRODUCTION	Local Co-ordinate Reference:	Well Well #516847 - MRC
Project:	Wetzel County, WV	TVD Reference:	KB @16' @ 1490.00usft (Savanna 654)
Site:	Big 190	MD Reference:	KB @16' @ 1490.00usft (Savanna 654)
Well:	Well #516847 - MRC	North Reference:	Grid
Wellbore:	Main Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	Surveys Main Wellbore	Database:	DB_Jul2216dt_v14

Project	Wetzel County, WV		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	West Virginia North 4701		

Site	Big 190				
Site Position:		Northing:	385,255.46 usft	Latitude:	39.552484
From:	Map	Easting:	1,688,243.35 usft	Longitude:	-80.605649
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.71 °

Well	Well #516847 - MRC					
Well Position	+N/-S	0.00 usft	Northing:	385,242.81 usft	Latitude:	39.552449
	+E/-W	0.00 usft	Easting:	1,688,212.17 usft	Longitude:	-80.605759
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	1,474.00 usft

Wellbore	Main Wellbore				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	7/13/2017	-8.25	66.88	52,333.00000000

Design	Surveys Main Wellbore				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	0.94	

Survey Program	Date 7/22/2017				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.00	4,516.00	Gyro 0-4516 MD (Main Wellbore)	Gyrodata_DP_MS	Gyrodata gyro-compassing and drop	
4,518.00	5,593.00	MWD TIP=4516 MD (Main Wellbore)	MWD	MWD - Standard	
5,627.00	14,299.00	MWD 8 1/2" (Main Wellbore)	MWD - OWSG	MWD - OWSG	

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Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.20	291.28	100.00	0.06	-0.16	0.06	0.20	0.20	0.00	
Gyro - Surf Loc: Lat=39.552449° Long: -80.605759°										
200.00	0.30	293.08	200.00	0.23	-0.57	0.22	0.10	0.10	1.80	
300.00	0.25	299.94	300.00	0.44	-1.00	0.42	0.06	-0.05	6.86	
400.00	0.15	301.61	400.00	0.62	-1.30	0.60	0.10	-0.10	1.67	
500.00	0.09	276.02	500.00	0.70	-1.49	0.67	0.08	-0.06	-25.59	
600.00	0.13	318.25	600.00	0.79	-1.64	0.76	0.09	0.04	42.23	
700.00	0.08	339.57	700.00	0.94	-1.74	0.91	0.06	-0.05	21.32	

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Site:	Big 190	MD Reference:	KB @16' @ 1490.00usft (Savanna 654)
Well:	Well #516847 - MRC	North Reference:	Grid
Wellbore:	Main Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	Surveys Main Wellbore	Database:	DB_Jul2216dt_v14

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
800.00	0.11	340.98	800.00	1.09	-1.80	1.06	0.03	0.03	1.41	
900.00	0.09	19.15	900.00	1.26	-1.80	1.23	0.07	-0.02	38.17	
1,000.00	0.14	330.86	1,000.00	1.44	-1.83	1.41	0.10	0.05	-48.29	
1,100.00	0.16	342.55	1,100.00	1.68	-1.94	1.65	0.04	0.02	11.69	
1,200.00	0.19	23.05	1,200.00	1.97	-1.91	1.93	0.12	0.03	40.50	
1,300.00	0.27	53.09	1,299.99	2.26	-1.66	2.23	0.14	0.08	30.04	
1,400.00	0.46	323.38	1,399.99	2.72	-1.71	2.70	0.53	0.19	-89.71	
1,500.00	3.44	280.66	1,499.93	3.60	-4.90	3.52	3.12	2.98	-42.72	
1,600.00	7.06	280.44	1,599.49	5.27	-13.89	5.04	3.62	3.62	-0.22	
1,700.00	7.64	283.70	1,698.67	7.96	-26.40	7.52	0.71	0.58	3.26	
1,800.00	4.90	281.52	1,798.06	10.39	-37.04	9.78	2.75	-2.74	-2.18	
1,900.00	1.65	288.78	1,897.88	11.70	-42.59	11.00	3.27	-3.25	7.26	
2,000.00	0.75	330.96	1,997.86	12.74	-44.27	12.01	1.20	-0.90	42.18	
2,100.00	1.22	5.74	2,097.85	14.37	-44.48	13.64	0.74	0.47	34.78	
2,200.00	1.71	24.51	2,197.82	16.79	-43.76	16.07	0.68	0.49	18.77	
2,300.00	2.53	34.27	2,297.75	19.97	-41.90	19.28	0.89	0.82	9.76	
2,400.00	2.94	36.41	2,397.63	23.86	-39.13	23.21	0.42	0.41	2.14	
2,500.00	3.19	36.40	2,497.49	28.16	-35.96	27.57	0.25	0.25	-0.01	
2,600.00	3.32	37.05	2,597.33	32.71	-32.56	32.17	0.14	0.13	0.65	
2,700.00	3.38	33.90	2,697.16	37.47	-29.17	36.98	0.19	0.06	-3.15	
2,800.00	2.71	30.30	2,797.02	41.96	-26.34	41.52	0.70	-0.67	-3.60	
2,900.00	1.98	24.12	2,896.93	45.57	-24.44	45.17	0.77	-0.73	-6.18	
3,000.00	1.46	8.66	2,996.89	48.41	-23.54	48.02	0.69	-0.52	-15.46	
3,100.00	1.15	359.34	3,096.86	50.67	-23.36	50.28	0.37	-0.31	-9.32	
3,200.00	0.96	354.92	3,196.84	52.51	-23.44	52.12	0.21	-0.19	-4.42	
3,300.00	0.94	349.98	3,296.83	54.15	-23.66	53.76	0.08	-0.02	-4.94	
3,400.00	0.87	341.77	3,396.82	55.68	-24.04	55.28	0.15	-0.07	-8.21	
3,500.00	0.87	336.87	3,496.81	57.10	-24.58	56.69	0.07	0.00	-4.90	
3,600.00	0.73	330.93	3,596.80	58.36	-25.19	57.93	0.16	-0.14	-5.94	
3,700.00	0.68	323.66	3,696.79	59.39	-25.85	58.96	0.10	-0.05	-7.27	
3,800.00	0.64	330.62	3,796.78	60.36	-26.47	59.91	0.09	-0.04	6.96	
3,900.00	0.58	326.18	3,896.78	61.26	-27.03	60.81	0.08	-0.06	-4.44	
4,000.00	0.55	325.16	3,996.77	62.08	-27.58	61.62	0.03	-0.03	-1.02	
4,100.00	0.63	332.75	4,096.77	62.96	-28.11	62.49	0.11	0.08	7.59	
4,200.00	0.49	317.85	4,196.76	63.77	-28.65	63.29	0.20	-0.14	-14.90	
4,300.00	0.64	311.11	4,296.76	64.45	-29.36	63.96	0.16	0.15	-6.74	
4,400.00	0.71	316.10	4,396.75	65.26	-30.21	64.76	0.09	0.07	4.99	
4,500.00	0.61	313.29	4,496.74	66.07	-31.02	65.56	0.11	-0.10	-2.81	
4,516.00	0.61	313.20	4,512.74	66.19	-31.15	65.67	0.01	0.00	-0.56	
4,518.00	0.61	328.66	4,514.74	66.21	-31.16	65.69	8.20	0.00	773.00	
KOP as drilled @ 4518 MD 4515 TVD - ProD MWD surveys - KOP as drilled Lat=39.552629° Long=-80.605873°										
4,581.00	0.80	324.11	4,577.74	66.85	-31.59	66.32	0.31	0.30	-7.22	
4,613.00	3.36	340.33	4,609.71	67.91	-32.04	67.38	8.00	8.00	50.69	

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Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,644.00	7.76	344.74	4,640.56	70.79	-32.90	70.24	14.25	14.19	14.23
4,676.00	11.25	348.96	4,672.12	75.94	-34.06	75.37	11.11	10.91	13.19
4,707.00	12.96	345.92	4,702.43	82.28	-35.49	81.69	5.89	5.52	-9.81
4,739.00	13.28	338.18	4,733.59	89.17	-37.73	88.54	5.58	1.00	-24.19
4,770.00	13.48	334.46	4,763.75	95.74	-40.61	95.06	2.85	0.65	-12.00
4,802.00	12.36	324.61	4,794.95	101.90	-44.20	101.16	7.71	-3.50	-30.78
4,834.00	11.83	315.69	4,826.24	107.04	-48.48	106.23	6.06	-1.66	-27.88
4,865.00	11.28	311.43	4,856.61	111.32	-52.97	110.43	3.27	-1.77	-13.74
4,897.00	9.29	307.49	4,888.10	114.96	-57.37	114.00	6.59	-6.22	-12.31
4,929.00	6.47	307.48	4,919.79	117.63	-60.85	116.62	8.81	-8.81	-0.03
4,960.00	3.45	324.49	4,950.67	119.45	-62.78	118.41	10.73	-9.74	54.87
4,992.00	3.87	3.14	4,982.61	121.31	-63.28	120.26	7.67	1.31	120.78
5,024.00	6.29	18.65	5,014.48	124.05	-62.66	123.01	8.63	7.56	48.47
5,056.00	8.62	20.79	5,046.21	127.96	-61.24	126.94	7.33	7.28	6.69
5,087.00	11.18	24.10	5,076.75	132.87	-59.19	131.89	8.46	8.26	10.68
5,119.00	14.13	32.02	5,107.97	139.02	-55.85	138.08	10.67	9.22	24.75
5,150.00	17.31	40.67	5,137.81	145.73	-50.84	144.87	12.72	10.26	27.90
5,182.00	20.73	46.52	5,168.06	153.24	-43.62	152.50	12.22	10.69	18.28
5,214.00	24.19	51.69	5,197.63	161.20	-34.37	160.62	12.44	10.81	16.16
5,245.00	25.97	56.37	5,225.71	168.90	-23.73	168.49	8.59	5.74	15.10
5,277.00	27.60	61.20	5,254.28	176.35	-11.40	176.14	8.49	5.09	15.09
5,309.00	28.02	66.93	5,282.59	182.87	2.02	182.88	8.45	1.31	17.91
5,341.00	30.13	73.59	5,310.56	188.09	16.64	188.34	12.06	6.59	20.81
5,372.00	30.48	79.40	5,337.33	191.73	31.84	192.23	9.52	1.13	18.74
5,404.00	30.08	84.59	5,364.97	193.98	47.80	194.74	8.27	-1.25	16.22
5,435.00	31.72	89.42	5,391.58	194.80	63.69	195.82	9.59	5.29	15.58
5,467.00	33.36	95.32	5,418.56	194.07	80.86	195.37	11.16	5.13	18.44
5,499.00	34.42	101.49	5,445.13	191.45	98.49	193.04	11.25	3.31	19.28
5,530.00	38.20	104.12	5,470.11	187.36	116.38	189.25	13.19	12.19	8.48
5,562.00	40.80	104.04	5,494.80	182.41	136.12	184.62	8.13	8.13	-0.25
5,593.00	38.91	100.52	5,518.60	178.18	155.53	180.70	9.49	-6.10	-11.35
5,627.00	37.60	95.20	5,545.30	175.29	176.36	178.16	10.42	-3.85	-15.65
ProD MWD surveys									
5,659.00	38.20	91.20	5,570.56	174.19	195.98	177.39	7.90	1.88	-12.50
5,691.00	39.70	87.80	5,595.44	174.38	216.09	177.90	8.16	4.69	-10.63
5,722.00	41.40	86.00	5,619.00	175.47	236.21	179.33	6.66	5.48	-5.81
5,754.00	43.50	85.00	5,642.61	177.17	257.74	181.38	6.89	6.56	-3.13
5,785.00	43.90	84.70	5,665.02	179.10	279.07	183.65	1.45	1.29	-0.97
5,817.00	45.50	83.30	5,687.77	181.45	301.45	186.37	5.87	5.00	-4.38
5,849.00	46.20	82.70	5,710.06	184.25	324.24	189.55	2.57	2.19	-1.88
5,912.00	44.80	79.80	5,754.22	191.07	368.64	197.09	3.96	-2.22	-4.60
5,975.00	43.30	75.20	5,799.51	200.52	411.39	207.25	5.61	-2.38	-7.30
6,038.00	42.70	73.70	5,845.58	212.04	452.78	219.44	7.88	-0.95	-2.38
6,070.00	43.20	75.30	5,869.01	217.86	473.79	225.61	3.75	1.56	5.00

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Design:	Surveys Main Wellbore	Database:	DB_Jul2216dt_v14

Survey									
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6,101.00	43.20	76.30	5,891.61	223.07	494.36	231.15	2.21	0.00	3.23
6,133.00	43.70	77.90	5,914.84	227.98	515.81	236.41	3.78	1.56	5.00
6,165.00	44.00	78.00	5,937.91	232.61	537.49	241.39	0.96	0.94	0.31
6,196.00	43.80	77.90	5,960.25	237.10	558.51	246.23	0.68	-0.65	-0.32
6,228.00	43.80	76.90	5,983.35	241.93	580.13	251.41	2.16	0.00	-3.13
6,259.00	43.60	76.40	6,005.76	246.87	600.97	256.70	1.29	-0.65	-1.61
6,291.00	43.30	76.00	6,028.99	252.12	622.34	262.30	1.27	-0.94	-1.25
6,323.00	43.00	76.30	6,052.34	257.36	643.59	267.88	1.14	-0.94	0.94
6,354.00	42.10	77.70	6,075.18	262.08	664.01	272.94	4.21	-2.90	4.52
6,417.00	39.90	83.40	6,122.74	268.90	704.74	280.43	6.88	-3.49	9.05
6,481.00	39.10	84.30	6,172.12	273.27	745.21	285.45	1.54	-1.25	1.41
6,544.00	41.00	84.60	6,220.34	277.18	785.56	290.03	3.03	3.02	0.48
6,608.00	40.40	86.80	6,268.87	280.32	827.17	293.85	2.43	-0.94	3.44
6,671.00	40.30	90.40	6,316.89	281.32	867.93	295.52	3.70	-0.16	5.71
6,734.00	39.80	90.80	6,365.11	280.89	908.47	295.76	0.89	-0.79	0.63
6,797.00	39.50	88.00	6,413.62	281.31	948.65	296.83	2.88	-0.48	-4.44
6,860.00	38.70	86.70	6,462.51	283.14	988.34	299.32	1.82	-1.27	-2.06
6,924.00	38.80	88.20	6,512.43	284.92	1,028.36	301.76	1.48	0.16	2.34
6,987.00	39.50	89.70	6,561.28	285.65	1,068.13	303.13	1.87	1.11	2.38
7,050.00	40.20	87.70	6,609.65	286.57	1,108.48	304.72	2.32	1.11	-3.17
7,113.00	39.90	87.00	6,657.88	288.44	1,148.97	307.25	0.86	-0.48	-1.11
7,176.00	39.80	85.60	6,706.25	291.05	1,189.26	310.52	1.43	-0.16	-2.22
7,239.00	39.40	87.30	6,754.79	293.54	1,229.33	313.66	1.83	-0.63	2.70
7,303.00	38.30	88.90	6,804.63	294.87	1,269.45	315.66	2.33	-1.72	2.50
7,364.00	39.30	89.90	6,852.17	295.27	1,307.67	316.68	1.93	1.64	1.64
7,427.00	40.10	89.20	6,900.64	295.59	1,347.91	317.66	1.45	1.27	-1.11
7,491.00	39.60	88.20	6,949.78	296.52	1,388.91	319.26	1.27	-0.78	-1.56
7,554.00	40.00	87.90	6,998.18	297.89	1,429.21	321.30	0.70	0.63	-0.48
7,585.00	39.80	88.00	7,021.96	298.60	1,449.09	322.33	0.68	-0.65	0.32
7,617.00	39.40	88.30	7,046.62	299.26	1,469.47	323.33	1.39	-1.25	0.94
7,649.00	39.20	84.80	7,071.39	300.48	1,489.70	324.88	6.96	-0.63	-10.94
7,680.00	39.90	78.90	7,095.30	303.28	1,509.22	328.00	12.32	2.26	-19.03
7,712.00	40.20	74.50	7,119.80	308.02	1,529.24	333.06	8.90	0.94	-13.75
7,743.00	40.50	71.00	7,143.43	313.97	1,548.41	339.33	7.37	0.97	-11.29
7,775.00	40.30	66.60	7,167.80	321.46	1,567.73	347.14	8.93	-0.63	-13.75
7,806.00	40.40	61.50	7,191.43	330.24	1,585.77	356.21	10.65	0.32	-16.45
7,838.00	40.30	57.70	7,215.82	340.72	1,603.63	366.98	7.69	-0.31	-11.88
7,869.00	40.30	53.50	7,239.47	352.04	1,620.17	378.58	8.76	0.00	-13.55
7,901.00	40.90	48.20	7,263.77	365.19	1,636.30	391.98	10.94	1.88	-16.56
7,933.00	41.60	45.00	7,287.83	379.68	1,651.62	406.73	6.95	2.19	-10.00
7,965.00	43.00	41.00	7,311.51	395.43	1,666.30	422.71	9.48	4.38	-12.50
7,989.00	44.60	37.90	7,328.83	408.26	1,676.84	435.71	11.15	6.67	-12.92
8,021.00	46.80	34.70	7,351.18	426.72	1,690.39	454.39	9.92	6.88	-10.00

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Company:	EQT PRODUCTION	Local Co-ordinate Reference:	Well Well #516847 - MRC
Project:	Wetzel County, WV	TVD Reference:	KB @16' @ 1490.00usft (Savanna 654)
Site:	Big 190	MD Reference:	KB @16' @ 1490.00usft (Savanna 654)
Well:	Well #516847 - MRC	North Reference:	Grid
Wellbore:	Main Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	Surveys Main Wellbore	Database:	DB_Jul2216dt_v14

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,053.00	48.70	30.00	7,372.70	446.73	1,703.04	474.60	12.38	5.94	-14.69
8,084.00	50.80	25.50	7,392.74	467.66	1,714.04	495.72	12.98	6.77	-14.52
8,116.00	52.80	21.00	7,412.53	490.76	1,723.95	518.97	12.69	6.25	-14.06
8,147.00	55.30	17.60	7,430.73	514.44	1,732.23	542.79	11.99	8.06	-10.97
8,179.00	57.80	14.90	7,448.37	540.07	1,739.69	568.54	10.52	7.81	-8.44
8,211.00	60.20	13.30	7,464.85	566.67	1,746.37	595.24	8.64	7.50	-5.00
8,242.00	62.50	11.40	7,479.72	593.24	1,752.18	621.91	9.16	7.42	-6.13
8,274.00	65.10	9.60	7,493.84	621.47	1,757.41	650.22	9.56	8.13	-5.63
8,306.00	67.20	7.50	7,506.78	650.41	1,761.75	679.23	8.89	6.56	-6.56
8,337.00	69.00	5.50	7,518.35	678.99	1,765.01	707.85	8.34	5.81	-6.45
8,369.00	71.30	3.80	7,529.21	708.98	1,767.44	737.88	8.75	7.19	-5.31
8,401.00	74.00	1.50	7,538.76	739.49	1,768.85	768.41	10.87	8.44	-7.19
8,432.00	76.60	359.10	7,546.62	769.47	1,769.00	798.39	11.24	8.39	-7.74
8,464.00	78.70	356.90	7,553.47	800.71	1,767.91	829.60	9.39	6.56	-6.88
8,495.00	79.90	356.00	7,559.22	831.11	1,766.02	859.97	4.81	3.87	-2.90
8,526.00	81.70	355.10	7,564.18	861.61	1,763.65	890.43	6.48	5.81	-2.90
8,558.00	84.40	354.10	7,568.05	893.23	1,760.66	922.00	8.99	8.44	-3.13
8,590.00	87.40	352.40	7,570.34	924.93	1,756.91	953.62	10.77	9.38	-5.31
8,618.00	88.66	350.59	7,571.30	952.60	1,752.77	981.23	7.87	4.52	-6.45
LP as drilled @ 8618 MD 7571 TVD - Target Marcellus - LP as drilled Lat=39.555123° Long=-80.599585°									
8,621.00	88.80	350.40	7,571.37	955.56	1,752.27	984.18	7.87	4.52	-6.45
8,653.00	89.70	349.80	7,571.79	987.08	1,746.77	1,015.60	3.38	2.81	-1.88
8,716.00	86.20	346.00	7,574.04	1,048.62	1,733.58	1,076.92	8.20	-5.56	-6.03
8,778.00	85.90	345.30	7,578.31	1,108.54	1,718.25	1,136.58	1.23	-0.48	-1.13
8,841.00	88.00	345.90	7,581.66	1,169.47	1,702.61	1,197.25	3.47	3.33	0.95
Deepest point @ 8841 MD 7582 TVD									
8,904.00	93.00	348.10	7,581.11	1,230.83	1,688.44	1,258.37	8.67	7.94	3.49
8,967.00	91.60	347.40	7,578.59	1,292.35	1,675.09	1,319.65	2.48	-2.22	-1.11
9,030.00	91.60	347.50	7,576.83	1,353.82	1,661.40	1,380.89	0.16	0.00	0.16
9,093.00	90.30	347.00	7,575.78	1,415.25	1,647.50	1,442.09	2.21	-2.06	-0.79
9,156.00	90.50	345.40	7,575.34	1,476.43	1,632.47	1,503.01	2.56	0.32	-2.54
9,220.00	90.90	345.20	7,574.56	1,538.33	1,616.23	1,564.64	0.70	0.63	-0.31
9,284.00	91.20	342.90	7,573.39	1,599.85	1,598.65	1,625.86	3.62	0.47	-3.59
9,347.00	91.40	341.60	7,571.96	1,659.84	1,579.45	1,685.53	2.09	0.32	-2.06
9,410.00	91.20	341.60	7,570.53	1,719.60	1,559.57	1,744.96	0.32	-0.32	0.00
9,474.00	91.60	340.20	7,568.96	1,780.06	1,538.63	1,805.06	2.27	0.63	-2.19
9,537.00	92.10	342.70	7,566.93	1,839.75	1,518.60	1,864.42	4.04	0.79	3.97
9,599.00	92.00	343.10	7,564.71	1,898.97	1,500.39	1,923.33	0.66	-0.16	0.65
9,662.00	90.10	344.20	7,563.56	1,959.41	1,482.66	1,983.47	3.48	-3.02	1.75
9,726.00	89.50	344.20	7,563.78	2,020.99	1,465.23	2,044.76	0.94	-0.94	0.00
9,790.00	90.60	343.10	7,563.73	2,082.40	1,447.21	2,105.86	2.43	1.72	-1.72
9,853.00	90.70	343.10	7,563.01	2,142.68	1,428.90	2,165.83	0.16	0.16	0.00
9,917.00	91.10	343.90	7,562.01	2,204.03	1,410.73	2,226.88	0.40	0.63	1.25
9,980.00	91.20	343.70	7,560.74	2,264.52	1,393.15	2,277.07	0.55	0.16	-0.32

Company: EQT PRODUCTION	Local Co-ordinate Reference: Well Well #516847 - MRC
Project: Wetzel County, WV	TVD Reference: KB @16' @ 1490.00usft (Savanna 654)
Site: Big 190	MD Reference: KB @16' @ 1490.00usft (Savanna 654)
Well: Well #516847 - MRC	North Reference: Grid
Wellbore: Main Wellbore	Survey Calculation Method: Minimum Curvature
Design: Surveys Main Wellbore	Database: DB_Jul2216dt_v14

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,043.00	91.50	344.10	7,559.26	2,325.03	1,375.69	2,347.29	0.79	0.48	0.63
10,106.00	90.80	342.30	7,557.99	2,385.33	1,357.48	2,407.28	3.07	-1.11	-2.86
10,169.00	90.20	340.60	7,557.44	2,445.05	1,337.44	2,466.66	2.86	-0.95	-2.70
10,233.00	90.60	341.20	7,557.00	2,505.52	1,316.50	2,526.78	1.13	0.63	0.94
10,296.00	90.90	341.00	7,556.17	2,565.12	1,296.10	2,586.04	0.57	0.48	-0.32
10,360.00	91.10	340.60	7,555.05	2,625.55	1,275.05	2,646.12	0.70	0.31	-0.63
10,423.00	90.20	342.00	7,554.34	2,685.22	1,254.85	2,705.45	2.64	-1.43	2.22
10,487.00	90.40	342.10	7,554.00	2,746.10	1,235.13	2,766.00	0.35	0.31	0.16
10,551.00	90.60	342.50	7,553.45	2,807.07	1,215.67	2,826.64	0.70	0.31	0.63
10,615.00	88.80	343.50	7,553.78	2,868.27	1,196.96	2,887.52	3.22	-2.81	1.56
10,678.00	88.90	343.10	7,555.05	2,928.60	1,178.86	2,947.55	0.65	0.16	-0.63
10,742.00	90.60	343.30	7,555.32	2,989.87	1,160.37	3,008.50	2.67	2.66	0.31
10,803.00	90.90	343.30	7,554.53	3,048.29	1,142.84	3,066.63	0.49	0.49	0.00
10,866.00	91.50	344.60	7,553.21	3,108.82	1,125.42	3,126.86	2.27	0.95	2.06
10,930.00	90.70	343.10	7,551.98	3,170.28	1,107.63	3,188.02	2.66	-1.25	-2.34
10,993.00	90.70	342.50	7,551.21	3,230.46	1,089.00	3,247.89	0.95	0.00	-0.95
11,056.00	91.00	342.40	7,550.27	3,290.52	1,070.00	3,307.63	0.50	0.48	-0.16
11,119.00	91.20	342.30	7,549.06	3,350.54	1,050.91	3,367.33	0.35	0.32	-0.16
11,183.00	91.60	342.40	7,547.50	3,411.51	1,031.51	3,427.97	0.64	0.63	0.16
11,246.00	90.10	342.50	7,546.57	3,471.57	1,012.51	3,487.71	2.39	-2.38	0.16
11,310.00	89.90	341.60	7,546.57	3,532.45	992.79	3,548.27	1.44	-0.31	-1.41
11,373.00	89.70	341.00	7,546.79	3,592.13	972.59	3,607.60	1.00	-0.32	-0.95
11,437.00	90.50	342.00	7,546.67	3,652.82	952.28	3,667.95	2.00	1.25	1.56
11,500.00	91.00	342.80	7,545.85	3,712.86	933.24	3,727.68	1.50	0.79	1.27
11,563.00	90.70	342.10	7,544.92	3,772.93	914.24	3,787.42	1.21	-0.48	-1.11
11,626.00	91.00	342.10	7,543.98	3,832.87	894.88	3,847.03	0.48	0.48	0.00
11,690.00	91.90	343.20	7,542.36	3,893.94	875.80	3,907.78	2.22	1.41	1.72
11,753.00	92.30	343.10	7,540.05	3,954.19	857.55	3,967.73	0.65	0.63	-0.16
11,817.00	90.70	344.20	7,538.38	4,015.58	839.54	4,028.81	3.03	-2.50	1.72
11,880.00	90.10	344.20	7,537.94	4,076.20	822.39	4,089.14	0.95	-0.95	0.00
11,943.00	90.20	343.60	7,537.77	4,136.73	804.92	4,149.37	0.97	0.16	-0.95
12,007.00	90.50	343.10	7,537.38	4,198.04	786.58	4,210.38	0.91	0.47	-0.78
12,070.00	90.20	342.20	7,537.00	4,258.17	767.80	4,270.20	1.51	-0.48	-1.43
12,133.00	90.00	342.10	7,536.89	4,318.14	748.48	4,329.84	0.35	-0.32	-0.16
12,196.00	90.30	341.90	7,536.72	4,378.06	729.02	4,389.43	0.57	0.48	-0.32
12,260.00	90.20	341.30	7,536.44	4,438.78	708.81	4,449.81	0.95	-0.16	-0.94
12,323.00	91.00	342.80	7,535.78	4,498.71	689.40	4,509.42	2.70	1.27	2.38
12,387.00	91.80	343.90	7,534.22	4,560.01	671.07	4,570.40	2.12	1.25	1.72
12,450.00	91.90	344.00	7,532.19	4,620.52	653.66	4,630.62	0.22	0.16	0.16
12,513.00	90.40	344.60	7,530.92	4,681.16	636.62	4,690.97	2.56	-2.38	0.95
12,576.00	90.00	344.00	7,530.70	4,741.80	619.57	4,751.33	1.14	-0.63	-0.95
12,639.00	89.20	342.40	7,531.14	4,802.11	601.36	4,811.33	0.84	-1.27	-2.54
12,702.00	89.40	342.40	7,531.91	4,862.16	582.31	4,871.06	0.32	0.32	0.00

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Company:	EQT PRODUCTION	Local Co-ordinate Reference:	Well Well #516847 - MRC
Project:	Wetzel County, WV	TVD Reference:	KB @16' @ 1490.00usft (Savanna 654)
Site:	Big 190	MD Reference:	KB @16' @ 1490.00usft (Savanna 654)
Well:	Well #516847 - MRC	North Reference:	Grid
Wellbore:	Main Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	Surveys Main Wellbore	Database:	DB_Jul2216dt_v14

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,766.00	91.40	341.60	7,531.46	4,923.02	562.54	4,931.59	3.37	3.13	-1.25
12,829.00	92.00	341.20	7,529.59	4,982.70	542.45	4,990.93	1.14	0.95	-0.63
12,892.00	92.40	341.50	7,527.18	5,042.35	522.32	5,050.24	0.79	0.63	0.48
12,954.00	91.30	342.40	7,525.17	5,101.27	503.12	5,108.84	2.29	-1.77	1.45
13,018.00	91.30	343.40	7,523.72	5,162.42	484.31	5,169.67	1.56	0.00	1.56
13,081.00	92.00	343.90	7,521.91	5,222.85	466.58	5,229.80	1.37	1.11	0.79
13,144.00	90.70	344.40	7,520.42	5,283.44	449.38	5,290.10	2.21	-2.06	0.79
13,207.00	90.20	344.50	7,519.93	5,344.13	432.49	5,350.50	0.81	-0.79	0.16
13,271.00	90.40	344.60	7,519.59	5,405.81	415.44	5,411.90	0.35	0.31	0.16
13,334.00	88.80	344.90	7,520.03	5,466.59	398.87	5,472.40	2.58	-2.54	0.48
13,398.00	89.50	345.00	7,520.98	5,528.39	382.25	5,533.92	1.10	1.09	0.16
13,461.00	88.00	343.30	7,522.36	5,588.98	365.05	5,594.21	3.60	-2.38	-2.70
13,524.00	88.10	341.70	7,524.50	5,649.02	346.12	5,653.94	2.54	0.16	-2.54
13,588.00	90.30	342.40	7,525.40	5,709.90	326.40	5,714.48	3.61	3.44	1.09
13,652.00	91.50	343.10	7,524.39	5,771.01	307.42	5,775.28	2.17	1.88	1.09
13,715.00	89.60	342.10	7,523.79	5,831.12	288.59	5,835.07	3.41	-3.02	-1.59
13,777.00	89.40	341.60	7,524.33	5,890.03	269.27	5,893.66	0.87	-0.32	-0.81
13,841.00	90.90	341.60	7,524.16	5,950.76	249.07	5,954.05	2.34	2.34	0.00
13,904.00	91.50	341.50	7,522.84	6,010.51	229.14	6,013.46	0.97	0.95	-0.16
13,966.00	91.80	341.60	7,521.05	6,069.30	209.53	6,071.92	0.51	0.48	0.16
14,029.00	91.20	341.50	7,519.41	6,129.04	189.59	6,131.32	0.97	-0.95	-0.16
14,092.00	91.20	341.70	7,518.09	6,188.80	169.71	6,190.76	0.32	0.00	0.32
14,156.00	91.30	341.90	7,516.69	6,249.59	149.73	6,251.20	0.35	0.16	0.31
14,219.00	91.40	341.20	7,515.21	6,309.33	129.80	6,310.61	1.12	0.16	-1.11
14,247.00	91.50	341.40	7,514.50	6,335.85	120.82	6,336.98	0.80	0.36	0.71
Survey @ 14247.00 MD 7514.50 TVD									
14,299.00	91.50	341.40	7,513.14	6,385.11	104.24	6,385.96	0.00	0.00	0.00
Survey projected to 14299.00 MD 7513.14 TVD - BHL as drilled Lat=39.569981° Long=-98.605668°									

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
BHL as drilled	0.00	360.00	7,513.14	6,385.11	104.24	391,627.92	1,688,316.41	39.569981	-80.605668
- hit/miss target									
- Shape									
- actual wellpath hits target center									
- Point									
LP as drilled	0.00	0.00	7,571.30	952.60	1,752.77	386,195.41	1,689,964.94	39.555123	-80.599585
- actual wellpath hits target center									
- Point									

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Company:	EQT PRODUCTION	Local Co-ordinate Reference:	Well Well #516847 - MRC
Project:	Wetzel County, WV	TVD Reference:	KB @16' @ 1490.00usft (Savanna 654)
Site:	Big 190	MD Reference:	KB @16' @ 1490.00usft (Savanna 654)
Well:	Well #516847 - MRC	North Reference:	Grid
Wellbore:	Main Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	Surveys Main Wellbore	Database:	DB_Jul2216dt_v14

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
100.00	100.00	0.06	-0.16	Gyro
100.00	100.00	0.06	-0.16	Surf Loc: Lat=39.552449° Long: -80.605759°
4,518.00	4,514.74	66.21	-31.16	KOP as drilled @ 4518 MD 4515 TVD
4,518.00	4,514.74	66.21	-31.16	ProD MWD surveys
4,518.00	4,514.74	66.21	-31.16	KOP as drilled Lat=39.552629° Long=-80.605873°
5,627.00	5,545.30	175.29	176.36	ProD MWD surveys
8,618.00	7,571.30	952.60	1,752.77	LP as drilled @ 8618 MD 7571 TVD
8,618.00	7,571.30	952.60	1,752.77	Target Marcellus
8,618.00	7,571.30	952.60	1,752.77	LP as drilled Lat=39.555123° Long=-80.599585°
8,841.00	7,581.66	1,169.47	1,702.61	Deepest point @ 8841 MD 7582 TVD
14,247.00	7,514.50	6,335.85	120.82	Survey @ 14247.00 MD 7514.50 TVD
14,299.00	7,513.14	6,385.11	104.24	Survey projected to 14299.00 MD 7513.14 TVD
14,299.00	7,513.14	6,385.11	104.24	BHL as drilled Lat=39.569981° Long=-980.605668°

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